REMARKS

Claims 1, 3-6, 8-18, 22-32, 34-41, 43-50, 52-56 and 58-64 are pending and at issue in the application with claims 1, 17, 29, 38 and 49 being independent claims. Claims 1, 17, 29, 38 and 49 have been amended. No claims have been added or cancelled in this response. Reconsideration and withdrawal of the rejections is respectfully requested.

Claims 1, 3-6, 8-18, 21-32, 34-41, 43-50 and 52-57 were rejected as unpatentable over Liebowitz et al. (U.S. Patent No. 5,812,545) in view of Toporek et al. (U.S. Patent No. 6,460,085). The applicants respectfully traverse the rejections in view of the amendments above and the remarks below.

Each of independent claims 1, 17, 29, 38 and 49 recites a method or a system using a plurality of communication connections to distribute data based on a parameter to worker objects to transmit data through a communication link having a bandwidth. A plurality of worker objects (or worker processes) are used to form messages from distributed data based on a parameter from that worker object. The worker object delivers these formed messages to underlying layers of communication connections to allocate a predetermined portion of the bandwidth. One of the problems that may be overcome by the recited method and apparatus is the limited amount of bandwidth in the communication link to send data. The recited method and apparatus increase the throughput in the communication link and reduce the average data transfer delay of the communication link when the communication connections send data through the communication link.

Based upon the applicants' review of the action's Response to Arguments (see 1/21/2010 action, pages 21-25), it has become apparent to the applicants that there is substantial confusion over the meaning of "worker object" or "worker process". Accordingly, the applicants offer a clarifying amendment to specify that each worker object or process includes or is an abstraction that represents collections of methods or processes and each worker object/process is encapsulated along with data needed to carry out the method or process of the worker object/process. With this understanding, it is readily apparent that the combination of Liebowitz et al. and Toporek et al. do not disclose the recited worker objects.

In particular, the action asserts that the worker objects (or processes) correspond to elements 174, 176 of Liebowitz et al., which are disclosed as users 174, 176 (see column 17, lines 10-25). Clearly, users (i.e., people) are not worker objects or processes. However, the applicants presume the action meant to refer to the ports 180, 182, 184 of terminals 12, where the committed information rates (CIRs) (e.g., 64Kbps, 32Kbps, 16Kbps) are allocated to the terminal 12, a port of the terminal 12, or permanent virtual circuit (PVC) of a port (see Fig. 8; column 17, lines 10-25 and lines 44-57). Even so, the terminal, port and/or PVC are not objects, such as the recited worker objects or processes, as they are understood by those of ordinary skill in the art (i.e., an abstraction that represents collections of methods or processes and each worker object/process is encapsulated along with data needed to carry out the method or process of the worker object/process). Nor does Liebowitz et al. provide any disclosure to this effect, particularly where terminals and ports are generally consider physical devices, and a PVC is generally considered a software representation of a physical device (i.e., a circuit). Indeed, it is telling that Liebowitz et al. does not utilize the term "object" anywhere within the disclosure.

The applicants also note the action's reference to the Frame Handler module 64 of the terminal 12 (see 1/21/2010 action, page 3). However, the disclosure of the Frame Handler module 64 also makes clear that worker objects or processes are not disclosed in Liebowitz et al. The only disclosure of the Frame Handler modules 64 is in Figs. 3 and 4, and as provided as follows:

> (column 4, lines 30-67):
>
> A data frame, from one of a number of different sources, is transmitted from the local user access device 42 to a port 40 connected to the PCD 52. ***The port 40 is programmed to support the frame format used in the user access device, that is, a Frame Handler module 64 in the PCD 52 processes the frame, accordingly.*** The information identifying the destination of the frame is provided in the frame in accordance with the frame format. ***There can be multiple Frame Handler modules 64 to support different formats and a multiplicity of communication ports 40, as shown in FIG. 4. The Frame Handler module 64 performs error checking. Invalid frames are discarded, and a record is preferably kept of all errors for network management purposes. Valid frames are transmitted to the Fragment Assembler/Disassembler (FAD) 66.*** The FAD

66 preferably creates an outgoing data queue 63 corresponding to each user access device 42 for storing data received therefrom via a corresponding Frame Handler module. The FAD 66 also creates preferably multiple incoming data queues indicated generally at 65 for storing data received via the satellite 14 and addressed to user access devices 42 connected to that terminal 12.

The FAD 66 can break each frame into smaller data segments called fragments. The FAD 66 stores as many fragments as possible in a burst buffer 68. ***The FAD 66 can create several burst buffers 68, depending on the amount of data received from the user access devices 42 via the Frame Handler modules 64.*** The collection of fragments is called the payload 108 (FIG. 7). The burst buffer 68 also stores a payload header 106 (FIG. 7) which identifies the location of each fragment in a payload. The payload header 106 also provides a corresponding fragment identifier for each fragment in a payload, as described below in connection with FIG. 7. The fragment identifier relates a fragment to the frame from which it was derived. The burst buffer 68 also stores bandwidth requests for transmission in, for example, the header 106. The size of the burst buffer 68 is set by a network-wide parameter (i.e., the parameter "packet.length" listed in Table I).

(column 7, line 45-67):

The FAD 66 assembles the fragments in the payloads 108 of bursts retained by the terminal 12 into the frames from which the fragments were derived using fragmentation overhead bytes. The fragmentation overhead bytes are described in further detail below in connection with FIG. 7. Incomplete frames are discarded, and an error report is generated by the FAD 66 for use by the NMC 13. Each complete frame contains an address, whose form is dependent upon the nature of the frame, as stated previously. In accordance with a second level of filtering, the address is analyzed to determine if it is associated with one of the communications ports 40 attached to the terminal 12. ***If so, the frame is forwarded by the FAD 66 to the appropriate Frame Handler module (FHM) 64.*** If the address is not associated with one of the communication ports 40 or the NMM 78 (FIG. 4), the frame is discarded. ***The FHM 64, using priority queuing, transmits the frame to the appropriate communications port 40.*** For example, a frame containing time critical information such as voice or video is transmitted to the appropriate port 40 before a frame containing, for example, data that is not time critical. ***The FHM 64 records statistics regarding the volume of data***

transmitted by a virtual circuit and a port which are also used by the NMC 13.

It can be readily seen that the Frame Handler module 64 performs functions such as error checking, error recording and then transmission to the FAD 66. However, the Frame Handler module 44 does not function as, nor is it disclosed as, an object, such as the recited worker objects or processes, as they are understood by those of ordinary skill in the art (i.e., an abstraction that represents collections of methods or processes and each worker object/process is encapsulated along with data needed to carry out the method or process of the worker object/process).

Accordingly, given the clarification of the worker objects and processes, it is clear that Liebowitz et al. does not disclose the recited worker objects or processes, where a worker object or process an abstraction that represents collections of methods or processes and each worker object/process is encapsulated along with data needed to carry out the method or process of the worker object/process. To the extent the action continues to rely upon Liebowitz et al. as disclosing the recited worker objects/processes, the applicants respectfully request supporting documentation demonstrating that one or ordinary skill in the art would interpret the disclosure of Liebowitz et al. as teaching worker objects/process, particularly where Liebowitz et al. makes no mention of "objects" of any kind. Toporek et al. fails to make up for the deficiencies of Liebowitz et al., because Toporek et al. also does not disclose worker objects or worker processes, nor has Toporek et al. been cited for such a purpose.

It is clear that in order for a claim to be rendered *prima facie* unpatentable, "[all] words in a claim must be considered in judging the patentability of that claim against the prior art." *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970). See MPEP 2143.03. As required by the Supreme Court in *KSR International Co. v. Teleflex Inc.*, 82 USPQ2d 1385 (2007) (*KSR*), the differences between the claimed invention and the prior art must still be ascertained, and both the invention and the prior art references must be considered as a whole. See also *Ex parte Clapp*, 227 USPQ 972, 973 (Bd. Pat. App. & Inter. 1985), MPEP 706.02(j) and MPEP 2141. In short, when formulating an obviousness rejection based upon a combination of prior art elements, it remains necessary to identify where each of the claim features are disclosed in the prior art and to identify a reason why a person of ordinary skill in the art would have combined the prior art elements in the manner

claimed. See *KSR* 82 USPQ2d at 1397. If all claims limitations are not disclosed, if the resulting combination do not result in the invention in the manner claimed and/or if one or ordinary skill in the art would not look to combine the references, then the rejection must be withdrawn. The combination of Liebowitz et al. and Toporek et al. fails to disclose the recited worker object (or process) and associated features in the manner claimed.

Conclusion

Five (5) independent claims remain in the application as previously paid for, and forty-nine (49) total claims remain in the application as previously paid for. This response is being filed with a Request for Continued Examination and fee, and a two month extension of time and fee. The applicants believe no additional fee is due. However, the Commissioner is hereby authorized to charge any deficiency in the amount enclosed or any additional fees which may be required under 37 CFR 1.16 or 1.17 to Deposit Account No. 13-2855. Should the examiner wish to discuss the foregoing, or any matter of form, in an effort to advance this application towards allowance, the examiner is urged to telephone the undersigned at the indicated number.

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Respectfully submitted,

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